

near side, it is often difficult to move and manipulate the bin into a convenient position whilst ensuring that refuse or waste does not spill from the bin or the bin does not tip over. This thus creates a hygiene and safety problem. Manipulation of the bin is particularly difficult where the texture of the surface on which the bin is located is loose
5 such as a gravel or earth surface as the wheels tend to dig into the surface.

Summary of the Invention

The present invention aims to provide in one aspect a rotatable base assembly for refuse
10 or waste containers, which overcomes or alleviates one or more of the above disadvantages. The present invention in a further aspect aims to provide in combination a refuse or waste container and rotatable base assembly.

The present invention thus provides in a first aspect a rotatable base assembly for a
15 waste container, said base assembly having a platform and a base, said platform being supported on said base for rotation about a substantially vertical axis and means for constraining said waste container on said platform.

Most preferably, the waste containers for use with the rotatable base assembly are of the
20 type having a pair of supporting wheels on one side of the base of the container such that when the container is tipped towards the wheels, it is supported on the wheels and may be wheeled to a desired location. The containers also have a chamber and manipulating handles located at an upper end of the chamber above the wheels. A lid is hinged to the chamber adjacent the manipulating handles for movement about an axis extending
25 substantially parallel to the wheel axis and the lid is provided with handles remote from the hinge axis of the lid.

The platform preferably includes an upper substantially planar surface to receive and support the base of a waste container. The constraining means may comprise one or
30 more ribs or ridges extending upwardly relative to the planar surface.

In one configuration, ribs or ridges may be provided on opposite sides of the platform.

The ribs or ridges may define recess into which the wheels of the container may be moved to locate the waste container on the platform. The rib or ridges may converge towards each other from the front to the rear of the platform. The constraining means may also include a rib or ridge located at the rear of the platform which acts as a stop to the waste container. The front of the platform however most preferably is free of a rib or ridge to enable the waste container to be readily moved onto the platform. The ribs or ridges may define a platform area substantially complementary to the cross section of the container at and including the wheels.

10 Pivot means between the platform and base suitably define the vertical axis about which the platform may rotate relative to the base. The pivot means may comprise axle means adapted to be located in aligned apertures arranged centrally in the platform and base. The axle means in one form may comprise a pin. The pin may be inserted through the apertures in the platform and base and positively engage with the base. The pin may have a head end and a shank which is inserted through the apertures in the platform and base. Preferably, the pin snap engages with the base to positively secure the platform to the base. For this purpose, the pin shank may have a leading barbed end for snap engagement with the base.

20 Preferably, bearing means are provided between the platform and base to support the platform on the base. The bearing means are preferably located at a radial spacing from the centre of the platform and base. Preferably the bearing means are supported on one of the platform and base and cooperate with an annular track on the other of the platform or base. Most preferably, the bearing means are supported on the platform and cooperate with an annular track provided on the base.

The bearing means most suitably comprise a plurality of bearings. The bearings may in one form comprise rollers mounted for rotation about axes extending radially from the centre of the platform or base. The rollers may have axles which engage with axle holders on the underside of the platform.

In another arrangement, the bearings may comprise ball bearings. The ball bearings

may be supported in complementary part spherical recesses in the platform or base for cooperation with a track in the base or platform respectively.

5 In a further aspect, the present invention provides a rotatable base assembly for a waste container of the type having a waste chamber, wheels at the bottom of said chamber and a lid hinged to said chamber for movement about a hinge axis on said one side of said chamber and above said wheels, said base assembly comprising a platform and a base for said platform, said platform being supported for rotational movement about a substantially vertical axis to said base, said platform being rotatable between a first
10 position in which said waste container may be moved onto or from said platform and a second position in which said container is constrained from movement to or from said platform .

Most preferably, the second position is approximately 180° from the first position
15 however the second position may be at any angular position relative to the first position. The second position may also be in either rotational direction from the first position.

The waste container may be constrained from movement to or from the platform by ribs or ridges on the platform. The platform however may be alternatively formed to
20 constrain movement of the waste container from the platform. Most preferably, the platform includes an entry region which facilitates loading of a waste container onto or unloading a waste container from the platform. The entry region may be bounded at least on opposite sides by the ribs or ridges.

25 In yet a further aspect, the present invention provides a mobile waste container having a waste chamber, wheels on one side of said waste chamber, said chamber being movable between a first position in which waste may be deposited into said chamber and a second position in which said chamber may be tipped and conveyed on said wheels, and means for supporting said chamber for rotational movement about a substantially vertical axis
30 when said chamber is in said first position.

The supporting means may comprise a support base adapted to seat on a ground surface in the first position and the waste container is suitably mounted to the base for the rotational movement. The bottom of the chamber may be pivotally mounted to the base for the aforesaid rotational movement.

5

Brief Description of the Drawings

In order that the invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawings which illustrate a preferred
10 embodiment of the invention and wherein:-

Fig. 1 is a perspective view of a rotatable base assembly for refuse or waste containers;

Fig. 2 is an exploded perspective view of the rotatable base assembly of Fig. 1;

Fig. 3 is a plan view of the rotatable base assembly of Fig. 1;

15 Fig. 4 is a sectional view along line A-A of Fig. 3;

Figs. 5 and 6 are plan views of the platform and base of the base assembly;

Figs. 7 to 10 illustrate the manner in which the rotatable base assembly may be used in combination with a waste container;

20 Fig. 11 is a perspective view of an alternative form of rotatable base assembly according to the invention carrying a waste container;

Fig. 12 is a plan view showing the relationship between the waste container and rotatable base assembly of Fig. 11; and

Fig. 13 illustrates an alternative embodiment of the invention.

25 Detailed Description of the Preferred Embodiments

Referring to the drawings and firstly to Figs. 1 to 6, there is illustrated a rotatable base assembly 10 for refuse or waste containers according to an embodiment of the present invention, the rotatable base assembly 10 having a platform 11 on which a refuse
30 container may seat and a base 12 upon which the platform 11 is supported for rotation about a substantially vertical axis.

The hub 30 is centrally apertured at 33 to receive the barbed end 27 of the axle pin 26 which may snap-lock into the aperture 33 to positively retain the platform 11 to the base 12 but permit rotational movement of the platform 11 relative to the base 12 about a substantially vertical axis defined by the axle pin 26.

5

When the platform 11 is secured to the base 12, the wheels 21 are aligned with and supported on the track 28 to provide support to the platform 11 from the underside with the wheels 21 running along the track 28 with rotation of the platform 11 relative to the base 12 in opposite directions.

10

To prevent or reduce the risks of dirt and dust reaching the axle pin 26 and thereby restricting rotation of the platform 11 relative to the base 12, the platform 11 may be provided with a downwardly extending annular rib 34 coaxial with the opening 25 and the platform 11 is provided with a pair of spaced apart upwardly extending annular ribs 15 35 coaxial with the opening 33 (see Fig. 4). When the platform 11 is supported to the base 12, the rib 34 extends downwardly to be located between the respective upwardly extending ribs 35 to prevent a series of cooperating barriers to minimise the risks of dust, dirt or other materials fouling the axle pin 26.

20 The rotatable base assembly 10 is particularly suited to use with a waste container 36 (see Figs. 7 to 10) of the type known as a wheelie bin which is formed of plastics and which has a generally rectangular elongated chamber 37 provided with a pair of wheels 38 mounted on a horizontal axle 39 extending along one side of the bottom of the chamber 37 and manipulating handles 40 at the upper end of the chamber 37 above the 25 wheels 38. The container 36 additionally includes a lid 41 which is hingedly connected to top of the chamber 37 at or adjacent the handles 40 for movement about an axis extending substantially parallel to wheel axle 39. The lid 41 additionally include a pair of integrally formed handles 42 which facilitate lifting of the lid 41 and deposit of waste into the chamber 37, the handles 42 being located on the side of the lid 41 opposite its 30 hinge axis.

As shown in Figs. 7 to 10, the assembled rotatable base assembly 10 is positioned in a

substantially horizontal attitude on the ground where the waste container 36 is usually located. Where the waste container 36 is to be placed onto the platform 11 of the base assembly 10, the platform 11 is rotated such that the open front 17 thereof is directed outwardly. The waste container 36 is then wheeled into a position in alignment with the
5 base assembly 10 and tipped rearwardly about its wheel axle 39 such that its leading end is raised and can be moved through the open front 17 onto the platform 11 as illustrated in Fig. 7. Further forward force applied to the container 36 in the direction B will cause the bottom 43 of the container 36 to seat substantially flat on the platform 11 which then
10 slides rearwardly to the position of Fig. 8 in which the container 36 is fully supported on the platform 11 with the wheels 38 locating within the recesses 18 which prevents further forward movement of the container 36. The container 36 may be guided onto the platform 11 by contacting the ribs or ridges 14 and the leading end of the container 36 may contact the ridge 16 at the front of the platform 11 which acts as a stop.

15 The container 36 and platform 11 may then be rotated relative to the base 12 (in this case clockwise) from the position of Fig. 8, through the position of Fig. 9 to the position of Fig. 10 where the container 36 and platform 11 are in a position approximately 180° from the position of Fig. 8. In the Fig. 10 position, the handles 42 of the lid 41 are located on the near side adjacent to the user and are thus readily accessible enabling them
20 to be grasped to lift the lid 41 for deposit of waste 44 into the chamber 37 as shown.

When the container 36 is full and heavy and/or it is time to place the container 36 out for emptying, the container 36 and platform 11 are rotated back to the position of Fig. 8 where the gripping handles 40 are adjacent the user. The gripping handles 40 may then
25 be grasped by the user, the container 36 slid rearwardly in the direction C in Fig. 8 and pivoted downwardly to the position of Fig. 7 such that the container 36 is supported on its wheels 38. The container 36 may then be wheeled to a position for collection.

Referring now to Figs. 11 and 12, there is illustrated a further form of rotatable base
30 assembly 45 according to the present invention, in Fig. 11 showing in combination with a waste container 36. The base assembly 45 includes a base 46 similar to the base 12 and a platform 47 supported on the base 46 for rotation about a substantially vertical axis

Claims

1. A rotatable base assembly for a waste container, said base assembly having a platform and a base, said platform being supported on said base for rotation about a substantially vertical axis and means for constraining said waste container on said platform.
5
2. A rotatable base assembly as claimed in claim 1 wherein said platform includes an upper substantially planar surface to receive and support the bottom of a waste container and wherein said constraining means includes one or more ribs or ridges extending upwardly relative to said planar surface.
10
3. A rotatable base assembly as claimed in claim 2 wherein said ribs or ridges are provided on opposite sides of the platform.
15
4. A rotatable base assembly as claimed in claim 3 wherein said waste container includes a pair of supporting wheels by which said container may be wheeled when tipped, and wherein said ribs or ridges define recesses into which said wheels of said container may be moved to locate the waste container on said platform.
20
5. A rotatable base assembly as claimed in claim 3 or claim 4 wherein said rib or ridges converge towards each other from the front to the rear of the platform.
6. A rotatable base assembly as claimed in any one of claims 2 to 5 wherein said
25 constraining means include a rib or ridge located at the rear of said platform to act as a stop to said waste container.
7. A rotatable base assembly as claimed in claim 5 or claim 6 wherein said ribs or ridges define a platform area substantially complementary to the cross section of the
30 container and wheels.
8. A rotatable base assembly according to any one of the preceding claims and

including pivot means between the platform and base and defining a vertical axis about which said platform may rotate relative to the base.

9. A rotatable base assembly as claimed in claim 8 wherein said pivot means
5 comprise axle means located in aligned apertures arranged centrally in the platform and base.

10. A rotatable base assembly as claimed in claim 9 wherein said axle means
10 comprises a pin which positively connects said platform to said base.

11. A rotatable base assembly as claimed in any one of the preceding claims and
including bearing means between said platform and base to support the platform on the
base.

12. A rotatable base assembly as claimed in claim 11 wherein said bearing means are
15 radially spaced from the centre of the platform and base.

13. A rotatable base assembly as claimed in claim 11 or claim 12 wherein said
bearing means are supported on one of the platform and base and cooperate with an
20 annular track on the other of the platform or base.

14. A rotatable bearing assembly as claimed in any one of claims 11 to 13 wherein
said bearing means comprise a plurality of bearings, said bearings comprising rollers
mounted for rotation about axes extending radially from the centre of the platform and
25 base.

15. A rotatable bearing assembly as claimed in any one of claims 11 to 13 wherein
said bearing means comprise ball bearings.

16. A rotatable base assembly for a waste container of the type having a waste
30 chamber, wheels at the bottom of said chamber and a lid hinged to said chamber for
movement about a hinge axis on said one side of said chamber and above said wheels,

said base assembly comprising a platform and a base for said platform, said platform being supported for rotational movement about a substantially vertical axis to said base, said platform being rotatable between a first position in which said waste container may be moved onto or from said platform and a second position in which said container is constrained from movement to or from said platform.

17. A rotatable base assembly as claimed in claim 16 wherein said second position is approximately 180° from the first position.

18. A rotatable base assembly as claimed in claim 16 or claim 17 wherein said container is constrained by ribs or ridges on said platform.

19. A rotatable base assembly as claimed in claim 18 wherein said platform has an entry region through which said waste container may be moved onto or from said platform, said entry region being bounded at least on opposite sides by said ribs or ridges.

20. A mobile waste container having a waste chamber, wheels on one side of said waste chamber, said chamber being movable between a first position in which waste may be deposited into said chamber and a second position in which said chamber may be tipped and conveyed on said wheels, and means for supporting said chamber for rotational movement about a substantially vertical axis when said chamber is in said first position.

21. A mobile waste container as claimed in claim 20 wherein said supporting means comprises a support base and wherein said waste container is mounted to said base for said rotational movement.

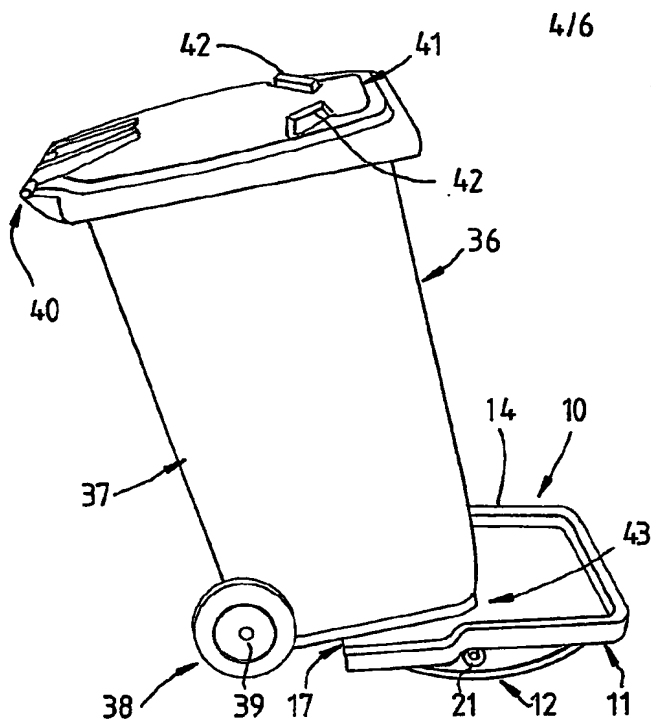


FIG. 7

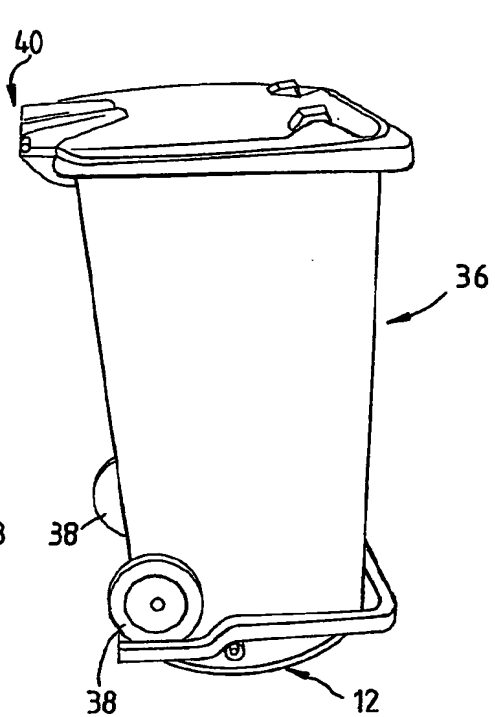


FIG. 8

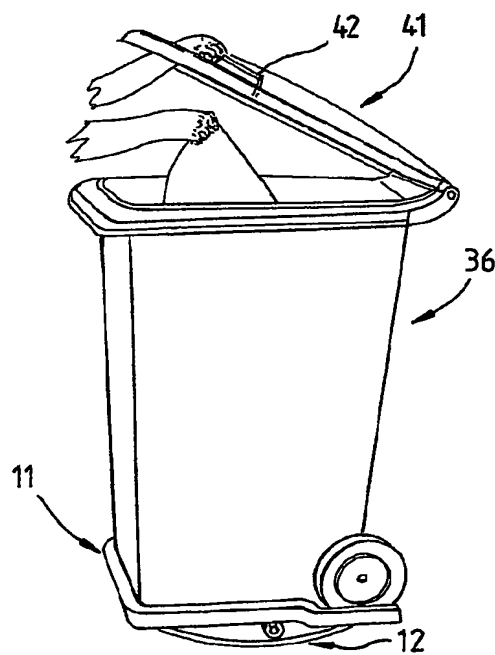


FIG. 10

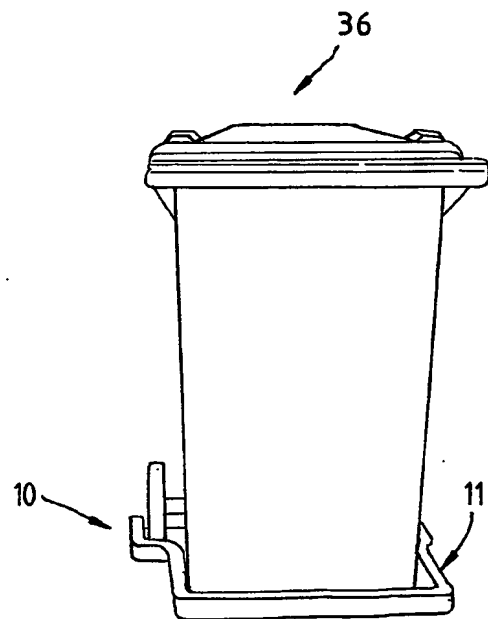


FIG. 9